

Listing of Claims:

This following listing of claims is provided for the convenience of the Examiner.
No amendments to the claims are made in this paper.

1. (Previously Presented) A method for determining whether a MEMS device is in a select state defined by a position of a moveable element comprised by the MEMS device and formed over a substrate comprised by the MEMS device, the method comprising:

changing a voltage of a first region of a sensing configuration formed within the substrate; and

measuring a second region of the sensing configuration formed within the substrate;

wherein the first and second regions are electrically coupled when the MEMS device is in the select state and electrically uncoupled when the MEMS device is not in the select state.

2. (Original) The method recited in claim 1 wherein the sensing configuration comprises a transistor.

3. (Original) The method recited in claim 2 wherein the sensing configuration comprises a field-effect transistor having a source region corresponding to the first region and a drain region corresponding to the second region.

4. (Original) The method recited in claim 2 wherein the sensing configuration comprises a bipolar junction transistor having an emitter region corresponding to the first region and a collector region corresponding to the second region.

5. (Canceled).

6. (Original) The method recited in claim 1 wherein the moveable element is not in contact with the first or second regions when in the position defining the select state.

7. (Original) The method recited in claim 1 wherein the moveable element is in contact with the first and second regions when in the position defining the select state.

8. (Original) The method recited in claim 7 wherein the first and second regions comprise electrically conductive regions.

9. (Original) The method recited in claim 1 further comprising performing changing the voltage and measuring the second region periodically.

10. (Original) The method recited in claim 9 further comprising periodically restoring a voltage to an electrode configured to provide an electrostatic force on the moveable element.

11. (Original) The method recited in claim 1 wherein changing the voltage of the first region comprises applying an ac voltage spike to the first region.

12. (Previously Presented) A MEMS device comprising:
a moveable element formed over a substrate and configured to move to a position defining a select state of the MEMS device upon activation of an electrode;
a sensing configuration having first and second regions formed within the substrate, wherein the first and second regions are electrically coupled when the moveable element is in the position and electrically uncoupled when the moveable element is not in the position; and

a detector configured to indicate when the first and second regions of the sensing configuration are electrically coupled.

13. (Original) The MEMS device recited in claim 12 wherein the sensing configuration comprises a transistor.

14. (Original) The MEMS device recited in claim 13 wherein:
the sensing configuration comprises a field-effect transistor;
the first region comprises a source of the field-effect transistor; and
the second region comprises a drain of the field-effect transistor.

15. (Original) The MEMS device recited in claim 13 wherein:
the sensing configuration comprises a bipolar junction transistor;
the first region comprises an emitter of the bipolar junction transistor; and
the second region comprises a collector of the bipolar junction transistor.

16. (Canceled).

17. (Original) The method recited in claim 12 wherein the moveable element is in contact with the first and second regions when in the position.

18. (Original) The MEMS device recited in claim 12 further comprising a dynamic refresh driver electrically coupled with the first region and configured to periodically provide an ac signal to the first region.

19. (Previously Presented) A microstructure for steering light, the microstructure comprising:

a substrate;

a structural linkage connected with the substrate and supporting a moveable element disposed to orient a reflective coating;

an electrode disposed to provide an electrostatic force on the moveable element upon actuation; and

a sensing configuration having first and second regions formed within the substrate and that are electrically coupled only when the moveable element is in a position that defines a select state for the microstructure.

20. (Original) The microstructure recited in claim 19 wherein the sensing configuration comprises a transistor formed within the substrate.

21. (Original) The microstructure recited in claim 20 wherein:

the sensing configuration comprises a field-effect transistor;

the first region comprises a source of the field-effect transistor; and

the second region comprises a drain of the field-effect transistor.

22. (Original) The microstructure recited in claim 20 wherein:

the sensing configuration comprises a bipolar junction transistor;

the first region comprises an emitter of the bipolar junction transistor; and

the second region comprises a collector of the bipolar junction transistor.

23. (Canceled).

24. (Original) The microstructure recited in claim 19 wherein the moveable element is in contact with the first and second regions when in the position.

25. (Original) The microstructure recited in claim 19 wherein the microstructure is one of a plurality of similar microstructures comprised by an array.

26. (Original) The microstructure recited in claim 25 wherein:
the first region of each of the microstructures is electrically coupled with a
dynamic refresh driver;
the electrode of each of the microstructures is electrically coupled with the
dynamic refresh driver; and
the second regions of the microstructures are electrically coupled with one
another.

27. (Original) The microstructure recited in claim 26 wherein the array is
comprised by a wavelength router.

28. (Previously Presented) A method for determining whether a MEMS device is
in a select state defined by a position of a moveable element comprised by the MEMS device and
formed over a substrate comprised by the MEMS device, the method comprising:
changing a voltage of a first fixed sensing element formed over the substrate; and
measuring a second fixed sensing element formed over the substrate,
wherein the first and second sensing elements are electrically coupled when the
MEMS device is in the select state and electrically uncoupled when the MEMS device is not in
the select state.

29. (Previously Presented) The method recited in claim 28 wherein the first and
second fixed sensing element comprise first and second sensing electrodes.

30. (Previously Presented) The method recited in claim 28 wherein:
the first and second fixed sensing elements comprise first and second waveguide
ports; and

measuring the second fixed sensing element comprises measuring an impedance between the first and second waveguide ports.

31. (Previously Presented) A MEMS device comprising:
a moveable element formed over a substrate and configured to move to a position defining a select state of the MEMS device upon activation of an electrode;
a sensing configuration having first and second fixed sensing elements formed over the substrate, wherein the first and second fixed sensing elements are electrically coupled when the moveable element is in the position and electrically uncoupled when the moveable element is not in the position; and
a detector configured to indicate when the first and second fixed sensing elements are electrically coupled.

32. (Previously Presented) The MEMS device recited in claim 31 wherein the first and second fixed sensing elements comprise first and second sensing electrodes.

33. (Previously Presented) The MEMS device recited in claim 31 wherein the first and second fixed sensing elements comprise first and second waveguide ports.

34. (Previously Presented) A microstructure for steering light, the microstructure comprising:
a substrate;
a structural linkage connected with the substrate and supporting a moveable element disposed to orient a reflective coating;
an electrode disposed to provide an electrostatic force on the moveable element upon actuation; and

a sensing configuration having first and second fixed sensing elements formed over the substrate and that are electrically coupled only when the moveable element is in a position that defines a select state for the microstructure.

35. (Previously Presented) The MEMS device recited in claim 34 wherein the first and second fixed sensing elements comprise first and second sensing electrodes.

36. (Previously Presented) The MEMS device recited in claim 34 wherein the first and second fixed sensing elements comprise first and second waveguide ports.